

Thus we are in the presence of a chemical action, but which only shows itself in the glow-worm under biological conditions. We can demonstrate this in another manner. Without pounding, certain toxic agents have the power of destroying the cellulæ. If we submit the glow-worm to the action of sulphuretted hydrogen, it is killed immediately. If we excite it afterwards electrically, we obtain no light. The cellulæ are intact in form, but destroyed physiologically; they have lost their functional power. It is certain, however, that the protoplasm contains all the materials necessary for the production of the phosphorescent substance, but the substance is not fabricated. It is only produced as a means for an end, under the influence of will, and by the intermediary of the nervous system, which excites the cellulæ and calls them into action. Phosphorescence is thus a phenomenon of the same order as muscular movement, such as the discharge of electricity in the apparatus of the *Torpedo*, the result of chemical combinations acting on the protoplasmic matter.

It is very probable that the phosphorescent substance is a gaseous product, for the structure of the gland, well studied by Owsjanikof, does not give one the idea of an organ secreting liquid. But chemical phosphorescent products at an ordinary temperature are not numerous, which induce one to believe the substance is phosphoretted hydrogen. It is for chemists to elucidate this point; but they should seek the matter in the cellular protoplasm, and not directly.

My researches induce me to believe phosphorescence a property of protoplasm, consisting in the disengagement of phosphoretted hydrogen. This explains why many of the lower animals, deprived of a nervous system, are phosphorescent. Besides, it offers the advantage of connecting the phenomena of phosphorescence in living beings with that we see in organic matters in a state of decomposition. It is one more example of a phenomenon of the biological order traced to an exclusively chemical cause.

DESCRIPTION OF A NEW LONGICORN BEETLE FROM ARABIA.

BY D. SHARP, M.B.

The pretty little *Cartallum ebulinum* is one of the commoner Longicorns in the Mediterranean region, and it is of interest as being hitherto without any congener, or without any nearly allied genus. I have found amongst the last *Coleoptera* sent by Dr. Millingen from

the Hedjaz district of Western Arabia an allied species, and as it is very easy to recognise, I have thought it expedient to give it a name and characterize it.

CARTALLUM THORACICUM, n. sp.

Angustulum, nigrum, thorace sanguineo, elytris viridibus; antennis, tarsi, tibiisque anterioribus rufo-testaceis, illis articulo basali nigro; thorace sparsim irregulariter punctato; elytris setis erectis pallidis parcius adspersis, fortiter punctatis.

Long. $6\frac{1}{2}$ —9 mm., *lat.* $1\frac{1}{2}$ — $2\frac{1}{4}$ mm.

The species is at first sight exactly similar to *C. ebulinum*, it has, however, the prothorax above and below entirely red, and its upper surface only sparingly punctured; the punctuation of the head is also much less dense and regular; the elytra are more coarsely punctured; and the front of the head is shorter, so that the antennæ are inserted nearer to the base of the mandibles: the thorax is more cylindrical, the angular prominence at the side, so conspicuous in *C. ebulinum*, being in *C. thoracicum* scarcely represented. The sexes show similar differences to those of *C. ebulinum*.

Found by Dr. Millingen near Jeddah.

Thornhill, Dumfries:

February 28th, 1880.

NOTES ON TENTHREDINIDÆ AND CYNIPIDÆ.

BY P. CAMERON.

(Continued from page 224).

Since writing the remarks on *Allantus*, Mr. J. B. Bridgman has sent me a species which he had from the late Mr. F. Smith as *zona*, but it is not the true *zona*; it is a variety of *viennensis*, with the posterior tarsi and apex of tibiæ blackish, instead of reddish. In this variety (at least, in this country) the yellow bands on the 4th and 5th segments are fuller than in the common form. The form with black tarsi is not uncommon apparently in Germany, but does not occur in Scandinavia. It has generally a distinct yellow splash on the side of the 6th abdominal segment, but it may be absent. I suspect that *A. succinctus* was founded on this form of *viennensis*; any way, it has no connection with *zona*, Klug, although it would appear to have passed current in this country for it.

With reference to *A. cingulum* I would remark, that the words in the table on p. 221—"the 5th and 6th segments yellow all round"—